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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,571	04/23/2002	Yoshiki Nakagawa	010903	1695

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WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER	
ZALUKAEVA, TATYANA	
ART UNIT	**PAPER NUMBER**
1713	

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/889,571	NAKAGAWA ET AL.	
	Examiner	Art Unit	
	Tatyana Zalukaeva	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *03 February 2004*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) *19-51* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-18* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☒ Claim(s) *1-51* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 2-5 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 2-5 recite functional group, which is EITHER being alkenyl or other functional group, while the independent claim 1 recites the presence of both functional AND internal alkenyl. Thus, dependent claims are BROADER that independent claim to which the depenedent claims refer.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites wherein the compound (1) is a functional group-containing cyclic olefin. However, cyclic olefin per se does not contain any alkenyl group. Therefore, claim 5 omits the limitations of the parent claim 1.

5. Claims 1-4, 8-12 stand rejected under 35 U.S.C. 102(a) /102(e) as being anticipated by Matyjaszewski et al (U.S. 5,763,548).

Matyjaszewski discloses ATR process (abstract) to obtain a living polymer having **functional group at its terminus**. End functional polymers are being produced. Fig.3 shows, for example, ATRP of methyl methacrylate in the presence of Cu(I)Cl and bypyridine initiated by 1-phenylethyl chloride. Suitable initiators are presentd by a general formula **R11R12R13C-X** (col.7, lines 45, 46), wherein X is a functional group defined in lines 50-58 of col. 8 , and R11, R12 R13 are defined in col. 8, lines 60-67, col. 9, lines 1-15. X is preferably Cl or Br (col. 9, line 16, 18). The groups allowed for substitute groups of initiator R11, R12, R13 include those having alkenyl or substituted alkenyl group, which together with X (Cl or Br) provides for compound having alkenyl and other functional group. Among the most preferred monomers Matyjaszewski names methyl Methacrylate, butyl acrylate, ethyl hexyl acrylate and styrene (col. 8, lines 40-44). Because the "living" (co)polymer chains retain an initiator fragment including X or X' as an end group, or in one embodiments as a substituent in a monomeric unit of the polymer chain, they may **be considered end-functional** or in-chain functional **(co)polymers**. Such (co)polymers may be used directly or be converted to other functional groups for further reactions, including crosslinking, chain extension, reactive injection molding (RIM), and preparation of other types of polymers (such as polyurethanes, polyimides, etc.) (col.17, 58-67). End-functional PSt having a COOH end group was prepared according to the procedure of Example 3, except that 2-chloropropionic acid was used in place of 1-PECl.

The polymer was obtained in 50% yield, and had an Mn 39,600 and an Mw /Mn =1.45.

A telechelic PMMA with two Br end groups was prepared in ethyl acetate according to the procedure of Example 3, except that 1.00.times.10.sup.-4 mol $C_6 H_4 (CH_2 Br)_2$ was used in place of 1-PECl, CuCl was used, and Bpy was present The polymer was obtained in 100% and had an Mw /Mn of 1.35. (see Examples 10-12, col. 36, examples 21-23, col. 38). In all of the above examples the compound having a functional group is introduced during polymerization or at the end point of polymerization for further functionalization. Compound disclosed in Examples 23 is a polymer having vinyl groups at either side.

Claims 13-18 stand rejected under 35 U.S.C. 102(a, e, b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Matyjaszewski.

Because of the nature of product-by process claims, the Examiner cannot ordinarly focus on the precise difference between the claimed product and the disclosed product. It is then Applinats' burden to prove that an unobvious difference exists. See ***In re Marosi***, 218 USPQ 289, 292-293 (CAFC 1983).

See also footnote 11 O.G. Notice 1162 59-61, wherein a 35 USC 102/103 rejection is authorized in the case of product-by-process claims because the exact identity of the claimed product or the prior art product cannot be determined by the Examiner.

Consult also ***In re Thorpe***, 227 USPQ 964 (CAFC 1985), wherein product-by-process claims are rejected over a product, which although prepared in a different manner, appeared to be the same (prima facie) as the claimed product.

In the instant case there is no evidence, or no reason to believe that the process of polymerization as instantly claimed produces a different product, that of a polymerization of Matyjaszewski , as per ***In re Thorpe***.

In the instant case no Graham vs. John Deere analysis was made but rather the test set out in MPEP 706.03(e) and In re Marosi was applied while explaining why the claimed product does not patentably distinguish over the prior art under 35 USC 102/103.

6. Applicants have perefercted foreign priority documents showing their foreigh applications antedate EP reference, and these rejections are therefore withdrawn.

7. Claims 1-4, rejected under 35 U.S.C. 102(a) as being anticipated by WO 98/47931. This is a PCT publication document for a U.S. patent 6,423,787 currently submitted by Applicants as IDS.

Disclosed is a functionalized polymer produced by a living radical polymerization wherein a functional group is introduced at a terminus of a polymer chain (abstract). Polymer having an alkenyl group on one terminus, and a compound of formula (I) wherein R1 represents the ester group satisfies the limitations of the instant claim 1.

Allowable Subject Matter

8. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims. There is no anticipation or suggestion that functionalizing compound would be a functional group containing cyclic olefin

Response to Arguments

9. Applicant's arguments filed June 5, 2003 have been fully considered but they are not persuasive.

Applicants' arguments reside in contention that the instant claim I recites a compound having a functional group and an internal alkenvl group."

That is, the claimed production method uses a compound (1) having both of a functional group and an internal alkenyl group, which Matyjaszewski et al. do not disclose. So, the rejection of claims 1-4 and 8-12 under 35 U.S.C. 102(a)/102(e) is not supported by Matyjaszewski et al".

This is not found persauasive as per reasons stated above. In fact compound (col.8, lines 450-50) that used as initiator (and attaches to the terminus of the growing chain) is having a functional group X 9Cl. Br) and R11, R12, R13, each of which can be alkenyl or alkynyl group (col.8, lines 65, 66), col.9, lines 1,2.

10. The crux of Applicants' arguments with regard to Matyaszewski reference is that the scheme of Example 23 is not enabling. Response to this matter has been already stated on this record and is incorporated herein in its entirety. In response to this it is noted that Applicants did not present any experimental or other evidence on why the reference is not enabling. Even if a reference discloses an inoperative device, it is prior

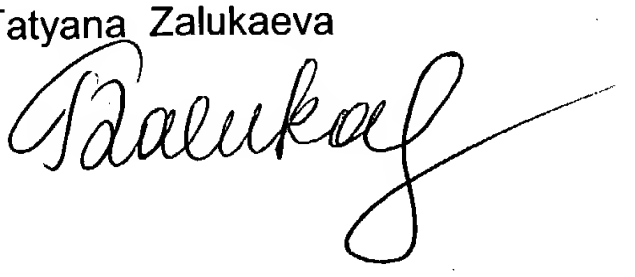
art for all that it teaches." Beckman Instruments v. LKB Produkter AB, 892 F.2d 1547, 1551, 13 USPQ2d 1301, 1304 (Fed. Cir. 1989). Therefore, "a non-enabling reference may qualify as prior art for the purpose of determining obviousness under 35 U.S.C. 103." Symbol Techs. Inc. v. Opticon Inc., 935 F.2d 1569, 1578, 19 USPQ2d 1241, 1247 (Fed. Cir. 1991). See further MPEP 2121.02, ...when a prior art reference merely discloses the structure of the claimed compound, **evidence** showing that attempts to prepare that compound were unsuccessful before the date of invention will be adequate to show inoperability. In re Wiggins, 488 F.2d 538, 179 USPQ 421 (CCPA 1971).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (571) 272-1115. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tatyana Zalukaeva



Primary Examiner
Art Unit 1713

April 16, 2004